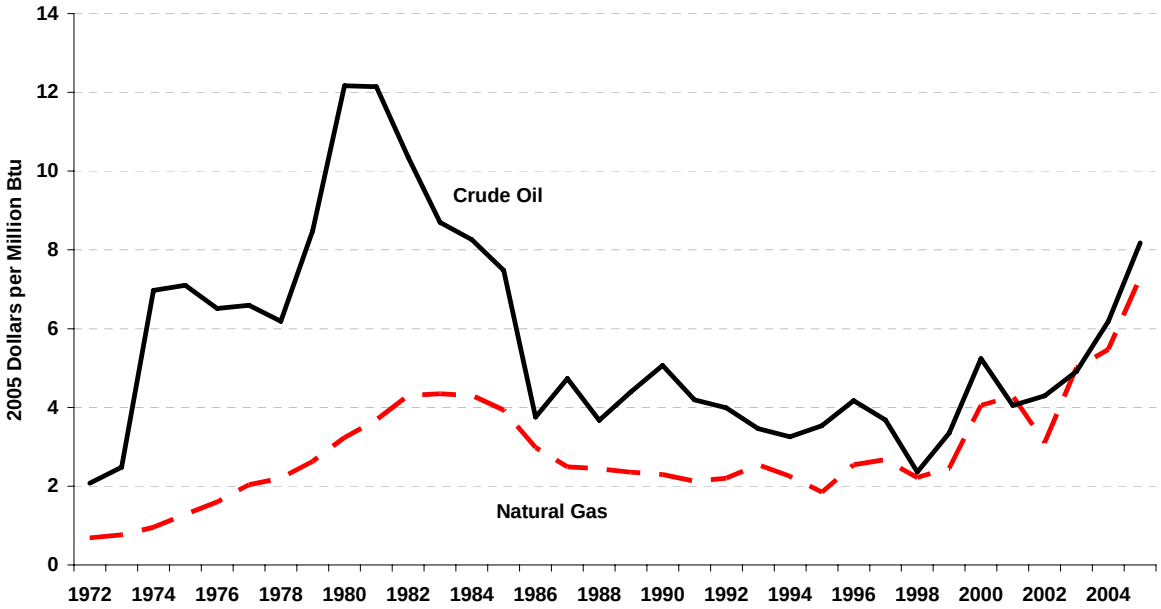
Overview of 2005 Petroleum and Natural Gas Markets

The FRS companies' financial results for 2005 were driven primarily by substantially higher prices for crude oil, natural gas, and petroleum products. Crude oil prices (imported refiner acquisition cost) increased 32 percent from 2004 (in constant 2005 dollars), to $48.86 per barrel, the highest level since 1984.[98] Natural gas wellhead prices increased 34 percent to $7.51 per thousand cubic feet (mcf) in 2005.[99] Although crude oil prices remained higher on a Btu basis in 2005, natural gas prices have risen by nearly the same amount as crude oil since 1998 **(Figure 33)**.

Figure 33. Imported Refiner Acquisition Cost of Crude Oil and Natural Gas Wellhead Prices, 1972-2005



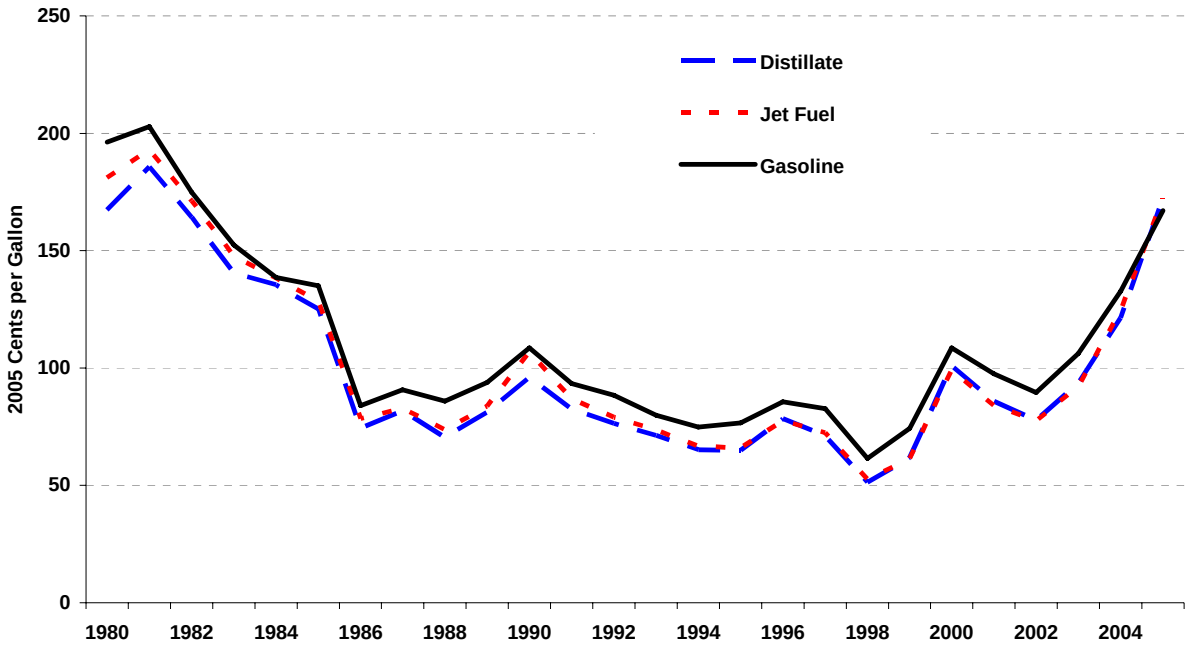
Source: Crude Oil Price: Energy Information Administration, *Monthly Energy Review* , DOE-EIA-0034 (2006/09) (Washington, DC, September 2006), Table 9.1; Natural Gas Price: Energy Information Administration, *Monthly Energy Review* , DOE/EIA-0034 (2006/09) (Washington, DC, September 2006), Table 9.11; Heat Content Factors: Energy Information Administration, *Monthly Energy Review* , DOE/EIA-0034 (2006/09) (Washington, DC, September 2006), Tables A2 and A4.

Gross refining margins increased in 2005 as petroleum product prices rose by more than the increase in crude oil prices (on a per-unit basis). Petroleum product prices rose sharply in the second half of the year following Hurricanes Katrina and Rita.[100] For the first time since EIA began collecting these data in 1978, annual average distillate and jet fuel prices were higher than gasoline prices **(Figure 34)**. Gasoline (refiner sales for resale) averaged $1.67 per gallon in 2005, up 26 percent from 2004 (in constant 2005 dollars). Distillate and jet fuel prices reached their highest levels since 1981. They each averaged $1.72 per gallon in 2005, 42 percent and 38 percent higher, respectively, than prices in 2004.

Despite higher prices, world oil demand increased 1.4 million barrels per day (mmbd) (1.7 percent) from the 2004 level to 83.8 mmbd in 2005 **(Table 19)**. This was about half of the increase for 2004 **(Figure 35)**

[98] Energy Information Administration, *Monthly Energy Review*, DOE-EIA-0034 (2006/09) (Washington, DC, September 2006), Table 9.1.
[99] Energy Information Administration, *Monthly Energy Review*, DOE/EIA-0034 (2006/09) (Washington, DC, September 2006), Table 9.11.
[100] Energy Information Administration, *Monthly Energy Review* (September 2006), Table 9.7.

Figure 34. Refiner Prices of Petroleum Products for Resale, 1980-2005



Source: Energy Information Administration, Refiner Petroleum Product Prices by Sales Type, available on the Internet at http://tonto.eia.doe.gov/dnav/pet/xls/pet_pri_refoth_dcu_nus_a.xls (as of October 5, 2006).

Table 19. World Petroleum Balance, 2004–2005
(Million Barrels per Day)

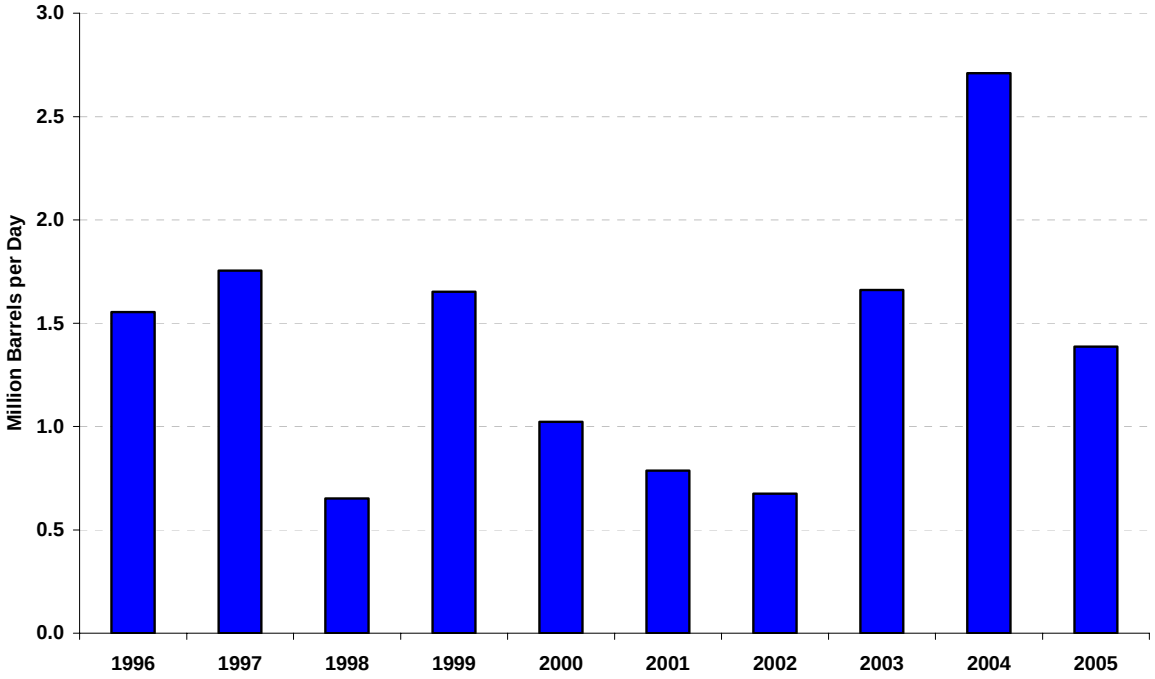
	Quarterly 2005				Annual	
	Q1	Q2	Q3	Q4	2004	2005
Demand	84.3	82.4	83.2	85.5	82.5	83.8
Supply	84.1	84.7	84.2	84.4	83.0	84.3
Supply from Inventories	0.1	-2.2	-1.0	1.1	-0.6	-0.5

Note: Supply from Inventories includes statistical discrepancy.
Source: Energy Information Administration, *International Petroleum Monthly* (September 2006), Table 2.1.

but nearly the same as the average annual increase from 1995 to 2004. Supply (which includes the production of crude oil, NGLs and other liquids, and refinery processing gain) remained higher than demand, which resulted in an increase in petroleum inventories of 0.5 mmbd in 2005. Non-OPEC (Organization of the Petroleum Exporting Countries) supply fell in 2005 for the first time since 1993,[101] primarily as a result of declines in production in the United States and the North Sea.[102] Worldwide reserve additions replaced 122 percent of crude oil and NGL production in 2005. The reserve replacement rate for non-OPEC countries was 109 percent.[103]

[101] Calculated from Energy Information Administration, *International Petroleum Monthly* (September 2006), Table 4.4.
[102] Energy Information Administration, *International Petroleum Monthly* (September 2006), Tables 4.1b and 4.1c.
[103] Calculated from reserves and production data in BP plc, *BP Statistical Review of World Energy* (June 2006), pp. 6, 8.

Figure 35. World Oil Consumption, Change from Previous Year, 1996-2005



Source: Energy Information Administration, *Internationl Petroleum Monthly* , September 2006, Table 4.6, available on the Internet at http://www.eia.doe.gov/ipm/ (as of October 5, 2006).

Growth in petroleum product demand (represented by petroleum product supplied) slowed considerably in the United States in 2005. It increased by only 0.3 percent over the previous year, to 20.8 mmbd **(Table 20)**. This was only about one-tenth of the increase in 2004. Increases in demand for gasoline, distillate, jet

Table 20. U.S. Petroleum Balance, 2004–2005
(Million Barrels per Day)

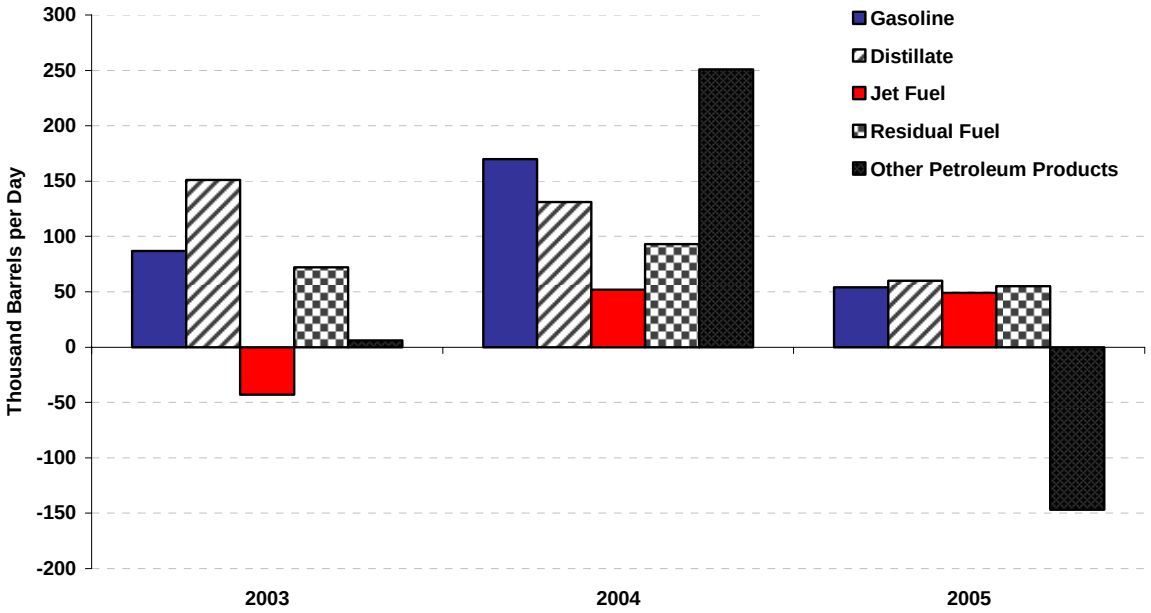
	Quarterly 2005				Annual	
	Q1	Q2	Q3	Q4	2004	2005
Demand	20.8	20.6	20.9	20.8	20.7	20.8
Crude Oil Production	5.5	5.5	4.9	4.8	5.4	5.2
NGL Production	1.9	1.8	1.7	1.5	1.8	1.7
Other Inputs	1.5	1.6	1.5	1.4	1.6	1.5
Net Imports	12.2	12.5	12.5	13.0	12.1	12.5
Supply from Inventories	-0.2	-0.9	0.4	0.1	-0.2	-0.1

Note: Other Inputs includes adjustments, other liquids production and refinery processing gain.
Source: Calculated from Energy Information Administration, *Monthly Energy Review* , DOE-EIA-0034 (2006/9) (Washington, DC, September 2006), Tables 3.1a and 3.1b.

fuel, and residual fuel offset a decline in "other petroleum products" **(Figure 36)**, which was led by a 102,000 barrel-per-day decline in demand for liquefied petroleum gases (LPG) and a 58,000 barrel-per-day decline in demand for petrochemical feedstock.

With Hurricanes Katrina and Rita affecting a substantial portion of oil and gas production in the U.S. Gulf of Mexico, domestic crude oil production fell 241,000 barrels per day (4.4 percent) in 2005 from 2004, and NGL production declined 92,000 barrels per day (5.1 percent). Net imports of petroleum increased by 452,000 barrels per day (3.7 percent) in 2005, sufficient to meet demand and to add 145,000 barrels per day to crude oil and petroleum product inventories.

Figure 36. U. S. Petroleum Product Consumption, Change from Previous Year, 2003-2005



Source: Calculated from Energy Information Administration, Petroleum Product Supplied Data, available on the Internet at http://tonto.eia.doe.gov/dnav/pet/xls/pet_cons_psup_dc_nus_mbblpd_a.xls (as of October 5, 2006).

Crude oil reserve additions in the United States in 2005 outpaced production for the first time since 2002. Producers also added more NGL reserves in 2004 and 2005 than they produced. The combined reserve replacement rate for crude oil and NGLs was 125 percent in 2005.[104]

Several refineries were also affected by hurricane damage. U.S. refinery output declined in 2005 by 14,000 barrels per day (0.1 percent) from 2004. Reflective of the decline in demand, refinery production of LPG and petrochemical feedstock fell in 2005. Refinery production of residual fuel declined, and imports increased to meet demand. Distillate output increased 3.7 percent from 2004, while the output of other products showed little change.[105]

Natural gas demand in the United States fell 2.5 percent in 2005 to 21.9 trillion cubic feet **(Table 21)** as natural gas prices reached their highest levels on record. Domestic natural gas production, also affected by Hurricanes Katrina and Rita, fell 2.7 percent in 2005 from 2004. Natural gas imports increased by 5.7 percent, nearly bringing supply and demand into balance for the year.

Natural gas reserve additions in the United States increased 34 percent from the previous year to 30.3 trillion cubic feet in 2005, representing a reserve replacement rate of 164 percent.[106]

---

[104] Reserve additions include revisions and adjustments, net sales and acquisitions, and total discoveries. Energy Information Administration, *Advance Summary U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2005 Annual Report* (September 2006), p. 3.
[105] Energy Information Administration, http://tonto.eia.doe.gov/dnav/pet/xls/pet_pnp_refp_dc_nus_mbblpd_a.xls**.**
[106] Reserve additions include revisions and adjustments, net sales and acquisitions, and total discoveries. Energy Information Administration, *Advance Summary U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves 2005 Annual Report* (September 2006), p. 3.

Table 21. U.S. Natural Gas Balance, 2004–2005

(Trillion Cubic Feet)

	Quarterly 2005				Annual	
	Q1	Q2	Q3	Q4	2004	2005
Demand	7.0	4.8	4.8	5.4	22.4	21.9
Natural Gas Production	4.7	4.7	4.5	4.4	18.8	18.2
Other Inputs	0.0	0.2	0.1	-0.4	0.4	0.0
Net Imports	0.9	0.8	0.9	1.0	3.4	3.6
Supply from Inventories	1.4	-0.9	-0.7	0.3	-0.1	0.0

Note: Other Inputs includes supplemental gaseous fuels and the balancing item.

Source: Energy Information Administration, *Monthly Energy Review* , DOE-EIA-0034 (2006/9) (Washington, DC, September 2006), Table 4.1.